CLEAN VERSION OF EACH REPLACEMENT PARAGRAPH/SECTION/CLAIM AND INSTRUCTIONS FOR ENTRY

Claim 1. A biological assay material for detecting a presence of a particular toxic substance comprising:

a base layer defined as a flexible film having two surfaces;

at least one biologically active ligand immobilized to one of said surfaces of said flexible film, said ligand having a degree of affinity for a particular toxic substance;

a dye conjugated to at least one peptide in contact with said ligand, said biologically active ligand having a degree of affinity for said peptide; and

a liquid film applied as a protectant layer;

whereby binding of the particular toxic substance and biologically active ligand produces a visual signal which is indicative of both the presence and identity of said particular toxic substance.

NEW CLAIMS:

Claim 2. The biological assay material of claim 1, wherein said flexible film is a polyolefin or a polyvinylchloride.

Claim 3. The biological assay material of claim 2, wherein said polyolefin is selected from the group consisting of polyethylene, polypropylene and mixtures thereof.

Claim 4. The biological assay material of claim 1, wherein said biologically active ligand is characterized by its ability to recognize at least one epitope of said particular toxic substance.

Claim 5. The biological assay material of claim 1, wherein said flexible film has undergone at least one treatment step effective to enhance said film's ability to immobilize a ligand applied to a surface thereof.

Claim 6. The biological assay material of claim 1, wherein said liquid film is an overprint food varnish.

Claim 7. The biological assay material of claim 1, wherein said biologically active ligand has a degree of affinity for said peptide which is less than said degree of affinity for said particular toxic substance.

Claim 8. The biological assay material according to claim 1, wherein the biologically active ligand is a chromogenic ligand.

Claim 9. The biological assay material according to claim 1, wherein the base layer is a film incorporating thereon a fluorescing antibody receptor.

Claim 10. The biological assay material according to claim 9, wherein said base layer is produced by printing a fluorescing antibody receptor upon said film and drying or heating the film

to immobilize said receptor.

Claim 11. The biological assay material according to claim 1, wherein a scavenger antibody which is a biologically active ligand characterized as having a higher affinity for the particular toxic substance than the immobilized ligand is provided in a sufficient amount to bind with the particular toxic substance up to and including a specific threshold concentration;

whereby the assay material is quantitatively sensitized so as to visually identify only those particular toxic substances that have reached a concentration level in excess of said specific threshold concentration.

Claim 12. The biological assay material according to claim 8, wherein the chromogenic ligand is selected from the group consisting of chromogenic ligands conjugated with dyes to produce a visual cue and chromogenic ligands characterized as photoactive compounds capable of producing a visual cue in response to a particular type of light exposure;

whereby binding of the particular toxic substance and chromogenic ligand results in a color change or visualization of a luminescent property which is indicative of both the presence and identity of said particular toxic substance.

Claim 13. The biological assay material according to claim 1, wherein the material is a food packaging material.

Claim 14. The biological assay material according to claim 1, containing a plurality of

biologically active ligands, each of said ligands being receptive to one or more epitopes of a different particular toxic substance or variant thereof and having a unique shape;

whereby upon binding with one or more of said different particular toxic substances, a visual signal will result thereby alerting an observer to the presence and identity of any or all of the particular toxic substances to which said material is receptive.

Claim 15. The biological assay material according to claim 1, wherein the particular toxic substance is one or more members selected from the group consisting of a particular microorganism or species thereof, biological materials containing the genetic characteristics of said particular microorganism, and mutations thereof.

Claim 16. The biological assay material according to claim 1, wherein the particular toxic substance is selected from the group consisting of microorganisms, nucleic acids, proteins, integral components of microorganisms and combinations thereof.

Claim 17. The biological assay material according to claim 1, wherein the ligand is selected from the group consisting of an antibody, a single stranded nucleic acid probe, an aptamer, a lipid, a natural receptor, a lectin, a carbohydrate and a protein.

Claim 18. A process for detecting a presence of a particular toxic substance comprising:

providing a liquid film in combination with a biologically active ligand;

providing a dye conjugated to a peptide;

contacting said liquid film in combination with a biologically active ligand with said dye conjugated to a peptide to form a homogeneous conjugate blend having a particular coloration;

applying said homogeneous conjugate blend to a surface of a flexible film; and

placing said flexible film in an environment which may contain a particular toxic substance;

whereby upon contact with said particular toxic substance a change in said particular coloration is exhibited.

Claim 19. The process of claim 18, wherein said flexible film is a polyolefin or a polyvinylchloride.

Claim 20. The process of claim 19, wherein said polyolefin is selected from the group consisting of polyethylene, polypropylene and mixtures thereof.

Claim 21. The process of claim 18, wherein said surface of said flexible film has undergone a treatment step effective to enhance said film's ability to immobilize a ligand applied thereto.

Claim 22. A process for detecting a presence of a particular toxic substance comprising:

providing a base layer which is a flexible film for immobilization of a ligand applied to a surface thereof;

providing a first layer in an icon shape on said flexible film, wherein said first layer comprises a liquid film in combination with a biologically active ligand;

providing a second layer in register with said first layer, wherein said second layer comprises

a dye conjugated to a peptide which exhibits a particular coloration;

placing said film in an environment which may contain a particular toxic substance, whereby upon contact with said particular toxic substance a change in said particular coloration is exhibited.

Claim 23. The process of claim 22, wherein said flexible film is a polyolefin or a polyvinylchloride.

Claim 24. The process of claim 23, wherein said polyolefin is selected from the group consisting of polyethylene, polypropylene and mixtures thereof.

Claim 25. The process of claim 22, wherein said surface of the flexible film has undergone a treatment step effective to enhance said film's ability to immobilize a ligand applied thereto.

Claim 26. A process for producing a biological assay material comprising:

providing a liquid film in combination with a biologically active ligand;

providing a dye conjugated to a peptide;

contacting said liquid film in combination with a biologically active ligand with said dye conjugated to a peptide to form a homogeneous conjugate blend having a particular coloration; and

applying said homogeneous conjugate blend to a surface of a flexible film;

whereby a biological assay material is produced which, upon contact with a particular toxic substance, exhibits a change in said particular coloration.

Claim 27. The process of claim 26, wherein said flexible film is a polyolefin or a polyvinylchloride.

Claim 28. The process of claim 27, wherein said polyolefin is selected from the group consisting of polyethylene, polypropylene and mixtures thereof.

Claim 29. The process of claim 26, wherein said surface of said flexible film has undergone a treatment step effective to enhance said film's ability to immobilize a ligand applied thereto.

Claim 30. A process for detecting a presence of a particular toxic substance comprising:

providing a homogeneous conjugate blend on a film having an icon shape and a particular coloration, wherein said homogeneous conjugate blend comprises a liquid film in combination with a biologically active ligand and a dye conjugated to a peptide, wherein said biologically active ligand has a degree of affinity for a particular toxic substance; and,

contacting said homogeneous conjugate blend on said film with said particular toxic substance, wherein said biologically active ligand has a degree of affinity for said peptide which is less than the degree of affinity for said particular toxic substance, wherein displacement of said peptide results in a change in said particular coloration within said icon shape.

Claim 31. The process of claim 30, wherein said flexible film is a polyolefin or a polyvinylchloride.

Claim 32. The process of claim 31, wherein said polyolefin is selected from the group consisting of polyethylene, polypropylene and mixtures thereof.

Claim 33. The process of claim 30, wherein said surface of said flexible film has undergone a treatment step effective to enhance said film's ability to immobilize a ligand applied thereto.

Claim 34. A process for detecting a presence of a particular toxic substance comprising:

providing a homogeneous conjugate blend on a film having an icon shape and particular coloration, wherein said homogeneous conjugate blend comprises a liquid film in combination with a biologically active ligand and a dye conjugated to a peptide, wherein said biologically active ligand has a degree of affinity for a particular toxic substance;

surrounding said homogeneous conjugate blend with said dye conjugated to a peptide in a circular shape; and,

contacting said homogeneous conjugate blend on said film with said particular toxic substance, wherein said biologically active ligand has a degree of affinity for said peptide which is less than the degree of affinity for said particular toxic substance, wherein displacement of said peptide results in a change in said particular coloration within said icon shape.

Claim 35. The process of claim 34, wherein said flexible film is a polyolefin or a polyvinylchloride.

Claim 36. The process of claim 35, wherein said polyolefin is selected from the group